

**UNITED STATES PATENT AND TRADEMARK OFFICE**

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

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*Ex parte* FRANK EDWARD JOUTRAS and RONALD J. HRUSKA, JR.

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Appeal 2007-2796  
Application 09/379,851  
Technology Center 3700

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Decided: December 6, 2007

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Before DONALD E. ADAMS, ERIC GRIMES, and FRANCISCO C.  
PRATS, *Administrative Patent Judges*.

PRATS, Administrative Patent Judge.

**DECISION ON APPEAL**

**STATEMENT OF THE CASE**

This is an appeal under 35 U.S.C. § 134 involving claims to an orthotic apparatus for exercising injured or weakened joints. The Examiner has rejected the claims as anticipated, obvious, and under the judicially created doctrine of obviousness-type double patenting. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

*The Invention*

“Braces for jointed anatomical limb segments . . . have joints that permit motion of the limb segments, such as for example, motion of the leg with respect to the thigh about the knee . . .” (Spec. 1). “Such braces may include stops to limit motion. In one class of exercise equipment, provision is made to attach the exercise equipment to a brace” (*id.*).

The Specification discloses “an exercise device that may be attached to existing braces or specific designed exercise braces, such as lower extremity braces or upper extremity braces and provide for controlled exercise of the person wearing the brace” (*id.* at 4).

Claims 1-12 are pending and on appeal (Br. 2). Claims 13-24 are also pending, but have been withdrawn from consideration by the Examiner (*id.*). Claim 1, the only independent claim appealed, is representative and reads as follows:

1. An orthotic apparatus for reducing arthrokinetic dysfunction after determining tracking problems after examining the patient comprising:
  - a jointed limb brace having a first section, a second section, and a brace joint means;
    - means for connecting said first section and second section to the patient whereby the first section may be connected to a portion of a limb of a person on one side of a joint of the limb and the second section to a portion of a limb of a person on the opposite side of the joint of the limb;
    - friction means for varying the resistance to movement of the first and second sections with respect to each other;
    - said friction means being connected to said first and second sections adjacent to said brace joint means; and
    - means for adjusting the resistance in the friction means wherein the friction means provides a preadjusted resistance to

motion independent of the velocity of the motion in a pattern to provide proper tracking.

*The Rejections*

The Examiner relies on the following documents in rejecting the claims:

Whitelaw	US 2,832,334	Apr. 29, 1958
Airy	US 5,052,379	Oct. 1, 1991
Stark	US 5,052,375	Oct. 1, 1991
Joutras	US 5,788,618	Aug. 4, 1998

The following rejections are before us for review:

Claim 1 stands rejected under 35 U.S.C. § 102(b) as anticipated by, or in the alternative, under § 103(a) as obvious in view of Whitelaw (Ans. 2; *see also* Non-Final Rejection<sup>1</sup> 3-4).

Claim 1 stands rejected under 35 U.S.C. § 103(a) as obvious in view of Airy and Whitelaw (Ans. 3; *see also* Non-Final Rejection 4-5).

Claims 2-12 stand rejected under 35 U.S.C. § 103(a) as obvious in view of Airy and Whitelaw as applied to claim 1, and further in view of Stark (Ans. 3; *see also* Non-Final Rejection 5-6).

Claims 1, 2, and 12 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-7 of Joutras (Ans. 3; *see also* Non-Final Rejection 7).

Claims 4, 10, and 11 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over

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<sup>1</sup> Office action mailed July 12, 2001.

claims 1-7 of Joutras in view of Whitelaw (Ans. 3; *see also* Non-Final Rejection 7-8).

Claims 3, 5, 6, 8, and 9 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-7 of Joutras in view of Stark (Ans. 3; *see also* Non-Final Rejection 8).

## REJECTION OF CLAIM 1 OVER WHITELAW

### *ISSUE*

The issue with respect to this rejection is whether the Examiner erred in rejecting claim 1 as being anticipated by, or alternatively obvious over, Whitelaw.

### *FINDINGS OF FACT*

1. Claim 1 recites an orthotic apparatus comprising the following elements:

(a) a jointed limb brace with first and second sections and brace joint means,

(b) means for connecting the first and second sections to a patient whereby the first and second sections can be connected to a limb on the opposite sides of the joint,

(c) friction means, connected to both sections of the apparatus and adjacent to the brace joint means, for varying the resistance of movement of the sections with respect to each other, and

(d) means for adjusting the resistance in the friction means.

The means for adjusting the resistance applied by the friction means must provide a pre-adjusted resistance to motion, and that resistance must be

independent of the velocity of the motion. The friction adjusting means must also provide resistance “in a pattern to provide proper tracking.”

2. Regarding the friction means, element (c), the Specification states that

[F]rictional resistance members may include . . . a mechanism that provides controlled variable or constant resistance in either or both directions. . . . One technique for adjusting the amount of resistance is to adjust the pressure normal to frictional surfaces that move with respect to each other. The resistance stops when motion or force applied by the patient to cause motion stops and the exercise device does not move or exert force except when providing a resisting force to motion by the person using it.

(Specification 7-8.)

3. Regarding the means for adjusting friction resistance, element (d), the Specification states that

The amount of friction is controlled . . . in some embodiments, by mechanical means such as ratchets, ramps, or the like in accordance with the direction of movement and/or position of the levers with respect to each other . . . . An overall bias pressure may be established by a tightening mechanism that applies normal pressure between two friction members.

(Specification 8-9).

4. The Specification does not define “proper tracking.” However, the Specification does state the following:

In this specification, the word, ‘arthrokinetic’[]dysfunction means that ordinary movement of body portions about a joint result in symptomatic events such as pain and/or inflammation and/or movement in a direction at an angle to the desired movement. . . .

Some causes of arthrokinetic dysfunction are *poor tracking or alignment of movement* because of weak or tight

muscles, compression forces of joints during movement or adhesive restriction of movement. For example, patello-femoral pain may be caused by: (1) *poor tracking* due to weak vastus medialis obliquus (VMO), tight hamstrings or tight illiotibial band; (2) compression of joints due to chondromalacia of the patella, patella alta/baja, narrow femoral/trochlear groove or genu varum/valgum; or (3) adhesive restriction due to poor patellar mobility.

(Specification 39-40, emphases added). We therefore find that the recitation “in a pattern to provide proper tracking” limits the claim to apparatuses that do not allow limbs in the device to move in an abnormal alignment with respect to each other.

5. Whitelaw discloses

[A]n inexpensive light-weight portable therapeutic device which is suitable for use on any of the major joints of the body such as the wrist, shoulder, elbow, knee or ankle and which may be operated by the patient himself to impart motion to the joint and also to exercise the adductor and abductor or flexor and extensor muscles of the affected joint through the application of external force.

(Whitelaw, col. 1, ll. 26-34). Whitelaw’s device allows “a patient to move the joint and exercise the muscles associated therewith by the use of these muscles to operate the exerciser against a preselected resistive force” (*id.* at col. 1, ll. 37-39).

6. Whitelaw’s device has the following elements:

(a) a limb brace with a first lever arm 10 and second lever arm 11 connected at a circular joint structure comprised of circular plate member 28 and housing 29 (Whitelaw, Figures 1 and 3; *see also* col. 2, ll. 1-61),

(b) “straps 18 and 19 to secure the forearm in the sling” and bracket 22 for securing the device to the hand (*id.* at col. 2, ll. 12-19),

(c) “friction member 56 . . . to provide a yieldable connection between the gear 45 and plate member 28” in the device’s joint portion (*id.* at col. 2, ll. 65-66; *see also* Figure 4), and

(d) “adjusting cap nut 49 to increase or decrease the force imposed on the friction member by the gear 45 and plate member 28” (*id.* at col. 3, ll. 34-36; *see also* Figure 4).

7. To use the exercising function of the device, Whitelaw discloses that “the slide latch 41 is moved to the locking position as shown in Fig. 2 to prevent rotation of the pinion 36. Henceforth, any movement of the lever arm 11 relative to the lever arm 10 will be opposed by the resistance offered by the friction member 56” (Whitelaw, col. 3, ll. 26-32).

#### *PRINCIPLES OF LAW*

“To anticipate a claim, a prior art reference must disclose every limitation of the claimed invention, either explicitly or inherently.” *In re Schreiber*, 128 F.3d 1473, 1477 (Fed. Cir. 1997). “[W]here a patentee defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention, the preamble is not a claim limitation.” *Rowe v. Dror*, 112 F.3d 473, 478 (Fed. Cir. 1997).

“A patent applicant is free to recite features of an apparatus either structurally or functionally.” *In re Schreiber*, 128 F.3d 1473, 1478 (Fed. Cir. 1997). However, “[f]unctional’ terminology may render a claim quite broad . . . [;] a claim employing such language covers *any and all*

embodiments which perform the recited function.” *In re Swinehart*, 439 F.2d 210, 213, (CCPA 1971); *see also Schreiber*, 128 F.3d at 1478-79 (holding that a prior art apparatus meeting all claimed structural limitations was anticipatory because it was inherently capable of performing the claimed function).

“[O]ne construing means-plus-function language in a claim must look to the specification and interpret that language in light of the corresponding structure, material, or acts described therein, and equivalents thereof, to the extent that the specification provides such disclosure.” *In re Donaldson Co.*, 16 F.3d 1189, 1193 (Fed. Cir. 1994).

#### *ANALYSIS*

Appellants argue that “Whitelaw does not disclose the first nor the last three paragraphs of claim 1” (Br. 17). Regarding the preamble, Appellants urge that “[t]here is no teaching of the reduction of arthrokinetic[] dysfunction as defined in the [S]pecification on page 39 or determining a tracking problem” (*id.* at 18).

We are not persuaded by this argument. We note that the preamble of claim 1 states that the apparatus is “for reducing arthrokinetic dysfunction after determining tracking problems after examining the patient.” However, because the body of claim 1 recites a structurally complete invention, the preamble’s recitation of the intended use of the apparatus is not a claim limitation. *See Rowe v. Dror*, 112 F.3d at 478.

Moreover, we do not agree that “[t]here is no teaching of the reduction of arthrokinetic[] dysfunction as defined in the [S]pecification on page 39” (Br. 18). The Specification states on page 39 that arthrokinetic



dysfunction refers to “pain and/or inflammation and/or movement in a direction at an angle to the desired movement” that results from attempting to use a joint normally. Whitelaw clearly states that its device is intended for therapeutic use (*see, e.g.*, Whitelaw, col. 1, ll. 26-34). Whitelaw therefore discloses that its device is capable of alleviating the disorders recited on page 39 of Appellants’ Specification.

Appellants argue that “[t]here is no teaching of . . . varying the resistance using the friction means . . .” (Br. 18). Rather, Appellants argue, “Whitelaw merely adjusts the frictional resistance to a constant preadjusted value as a typical exercise device” (*id.*).

We are not persuaded by this argument. Claim 1 recites that the adjusting means for the friction means “provides a preadjusted resistance to motion independent of the velocity of the motion.” The Specification states that the adjusting means can be “mechanical means *such as* ratchets, ramps, *or the like* in accordance with the direction of movement and/or the position of the levers with respect to each other” or that “[a]n overall bias pressure may be established by *a tightening mechanism* that applies normal pressure between two friction members” (Specification 8-9, emphases added).

Whitelaw’s adjusting cap nut 49 can be used “to increase or decrease the force imposed on the friction member by the gear 45 and plate member 28” (Whitelaw, col. 3, ll. 34-36; *see also* Figure 4). Because Whitelaw’s adjusting cap nut is a mechanical tightening means that provides a variable “preselected resistive force” (*id.* at col. 1, l. 39) to the friction means, independent of the velocity of the patient’s motion, we agree with the

Examiner that Whitelaw's adjuster is encompassed not only by the language in claim 1, but also by the supporting language in the Specification.

Appellants argue that "[t]here is no teaching of . . . a pattern to provide proper tracking" (Br. 18). Appellants urge that "[t]he specification clearly defines what is meant by the pattern[;] its purpose and effect and weight must be given to those recitations in the claims relating t[o] these matters in a rejection under 35 U.S.C. 102" (*id.*).

We are not persuaded by this argument.

As discussed above, when viewed in light of page 39 of the Specification, we interpret the recitation "in a pattern to provide proper tracking" to limit the apparatus of claim 1 to one that does not allow limbs in the device to move in an abnormal alignment with respect to each other. Because Whitelaw's device has straps that limit the ability of the limbs surrounding the braced joint from moving in abnormal directions, we agree with the Examiner that Whitelaw meets this limitation. *See In re Swinehart*, 439 F.2d at 213 (claim using functional language encompasses all devices performing that function); *see also In re Schreiber*, 128 F.3d at 1478-79 (prior art apparatus meeting all claimed structural limitations was anticipatory because it was inherently capable of performing the claimed function).

Therefore, because we agree with the Examiner that Whitelaw discloses a device meeting all of the claimed limitations, we affirm the Examiner's anticipation rejection of claim 1. Because we affirm the

anticipation basis of the Examiner's rejection of claim 1, we do not consider the Examiner's alternative obviousness basis for rejecting claim 1.

## REJECTION OF CLAIM 1 OVER AIRY AND WHITELAW

### *ISSUE*

The issue with respect to this rejection is whether the Examiner erred in rejecting claim 1 as obvious in view of Airy and Whitelaw.

### *FINDINGS OF FACT*<sup>2</sup>

8. Airy discloses "a combination brace and portable body joint exercising appliance or apparatus 14" (Airy, col. 4, ll. 39-40; *see also* Fig. 1). Airy's apparatus "includes an articulating frame 16 composed of an upper frame section 18 connected to a lower frame section 20 by pivot joint assemblies 22a and 22b to enable the upper and lower frame sections to relatively pivot or articulate about a transverse axis 24" (*id.* at col. 4, ll. 45-50).

9. Airy discloses that

The pivot axis 24 is positioned in approximate alignment with the anatomical axis of rotation of the knee by a pair of upper cuff assemblies 26 and 28 of the upper frame section 18 to encircle the wearer's thigh and a pair of lower cuff assemblies 30 and 32 of the lower frame section 20 to encircle the lower leg of the wearer.

(Airy, col. 4, ll. 50-56).

10. Airy discloses that instead of using a locking mechanism to maintain the brace in a rigid position,

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<sup>2</sup> Rather than restating fact findings regarding the scope of claim 1 and the disclosure of Whitelaw, we list here the additional facts pertinent to our disposition of this rejection.

[t]he lock-up plate assembly 34 may be conveniently removed from the pivot joint assemblies 22A and 22B and substituted with a resistance load unit or mechanism 36 shown in FIGS. 5 and 6 to apply desired levels of resistance to relative rotation of the upper and lower frame sections 18 and 20 during flexure and/or extension of the leg. The knee joint is exercised simply by flexing and extending the leg in opposition to the resistance load mechanism 36.

(Airy, col. 4, l. 67, to col. 5, l. 7).

11. Airy discloses that the resistance mechanism may “utilize[] the shear resistance of a viscous fluid to resist the articulation of the frame 16” (Airy, col. 11, ll. 21-22).

#### *PRINCIPLES OF LAW*

Recently addressing the issue of obviousness, the Supreme Court reaffirmed “that when a patent ‘simply arranges old elements with each performing the same function it had been known to perform’ and yields no more than one would expect from such an arrangement, the combination is obvious.” *KSR Int’l v. Teleflex Inc.*, 127 S. Ct. 1727, 1740 (2007) (quoting *Sakraida v. AG Pro, Inc.*, 425 U.S. 273 (1976)).

The Court also stated that it is obvious to choose from among known equivalents:

When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense. In that instance the fact that a combination was obvious to try might show that it was obvious under § 103.

*Id.* at 1742.

“Express suggestion to substitute one equivalent for another need not be present to render such substitution obvious.” *In re Fout*, 675 F.2d 297, 301 (CCPA 1982); *see also In re Mayne*, 104 F.3d 1339, 1340 (Fed. Cir. 1997) (“Because the applicants merely substituted one element known in the art for a known equivalent, this court affirms [the rejection for obviousness].”).

#### *ANALYSIS*

Finding that “Airy does not disclose that the resistance means is a friction means,” the Examiner contends that claim 1 would have been obvious to a person of ordinary skill because “one skilled in the art would have known to use various resistance means on a rehabilitative orthotic for adjusting the resistance during therapy, including a friction means taught by Whitelaw” (Non-Final Rejection 4-5).

Appellants contend that Airy and Whitelaw are not “directed to the problem of tracking” (Br. 20). Instead, Appellants argue, Airy “disclose[s] an exercising device in which the force varies with velocity and which could not be used to selectively provide resistance to the antagonistic muscles to compensate for the weaker agonistic muscles so the agonistic and antagonistic can work together in a normal manner to prevent arthrokinetic dysfunction” (*id.*). Appellants argue that “Whitelaw discloses a fixed resistance but does not disclose varying that resistance as well as adjusting it to a preselected value” (*id.*). Appellants conclude that since neither reference teaches the ultimate purpose of the claimed invention, “nor provide[s] any reason why features of one should be incorporated in the

other, it would not be obvious to incorporate the fixed resistance of Whitelaw into the resistance of Airy, et al. and to provide the mechanisms for providing a pattern of resistance that could avoid arthrokinetic dysfunction” (*id.*).

We do not find Appellants’ arguments persuasive. While Airy and Whitelaw might not use the term “tracking” to describe the manner of using their devices, both references disclose that the devices are secured to the patient in a manner that would prevent abnormal limb movement (*see e.g.*, Whitelaw, Figure 1; Airy, Figure 1).

With respect to the claimed friction means, even assuming for argument’s sake that Airy’s resistance mechanism varies with the velocity applied by the patient, that fact does not undermine the ultimate conclusion of obviousness, because Airy is applied in combination with Whitelaw. *See In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986) (“Non-obviousness cannot be established by attacking references individually where the rejection is based upon the teachings of a combination of references. . . . [The reference] must be read, not in isolation, but for what it fairly teaches in combination with the prior art as a whole.”).

As discussed above, Whitelaw’s adjusting cap nut 49 can be used “to increase or decrease the force imposed on the friction member by the gear 45 and plate member 28” (Whitelaw, col. 3, ll. 34-36; *see also* Figure 4). One of ordinary skill would therefore have reasoned that, in a manner similar to Airy’s resistance mechanism, Whitelaw’s adjustable friction mechanism would give a joint-rehabilitating orthotic device sufficient adjustable resistance to exercise the muscles surrounding a patient’s joint.

Thus, we agree with the Examiner that one of ordinary skill would have considered Whitelaw's friction mechanism to be equivalently useful to Airy's resistance mechanism in an orthotic device useful for exercising limbs adjacent to an injured or weakened joint. As noted above, "[e]xpress suggestion to substitute one equivalent for another need not be present to render such substitution obvious." *In re Fout*, 675 F.2d at 301. We therefore affirm the Examiner's rejection of claim 1 as obvious over Airy and Whitelaw.

#### REJECTION OF CLAIMS 2-12 OVER AIRY, WHITELOW, AND STARK *ISSUE*

The issue with respect to this rejection is whether the Examiner erred in rejecting claims 2-12 as obvious in view of Airy and Whitelaw as applied to claim 1, and further in view of Stark.

#### *CLAIM GROUPINGS*

Applicable at the time Appellants' Brief was filed, 37 C.F.R. § 1.192(c)(7) states

For each ground of rejection which appellant contests and which applies to a group of two or more claims, the Board shall select a single claim from the group and shall decide the appeal as to the ground of rejection on the basis of that claim alone unless a statement is included that the claims of the group do not stand or fall together and, in the argument under paragraph (c)(8) of this section, appellant explains why the claims of the group are believed to be separately patentable. Merely pointing out what the claims cover is not an argument as to why the claims are separately patentable.

Regarding claim groupings, Appellants state that

The claims each recite different features and do not rise and fall together.

There is only one rational group of claims because claim 1 is the only independent claim with the other claims depending from it. However, claims 3, 5, 6 and 8 rise and fall together and claims 4 and 10 rise and fall together. Each of the claims is argued separately below.

(Br. 7).

Appellants' grouping of claims is internally inconsistent in that Appellants initially state that no claims stand or fall together, and then subsequently state that claims 3, 5, 6, and 8 stand or fall together, and that claims 4 and 10 stand or fall together. Moreover, although Appellants state that the claims have been argued separately, Appellants' arguments are tantamount to mere restatements of the subject matter present in the claims (*see* Br. 23-24, addressing the features of claims 5-12). We therefore divide claims 2-12 into three groups, with claims 2, 3, and 4 being representative of the rejected claims.

### *FINDINGS OF FACT*<sup>3</sup>

12. Claims 2-4 read as follows:

2. Orthotic apparatus according to claim 1 in which said friction means includes first and second friction members and the means for adjusting includes control means having a program; said program controlling pressure between said first and second friction members.

3. Orthotic apparatus according to claim 2 in which the pressure between said first and second friction members is controlled magnetically.

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<sup>3</sup> The facts concerning the disclosures of Airy and Whitelaw are set forth above.



4. Orthotic apparatus according to claim 2 in which the pressure between said first and second friction members is controlled by a motor-driven screw drive means.

13. Stark discloses an “instrumented orthopedic restraining device” (Stark, abstract) which consists of two pairs of parallel bars hinged at a joint, such as the knee, with the bars being attached to the patient’s limb on either side of the joint (*see id.* at Figures 3 and 4). Movement of the bars is governed by an “electromechanical brake/clutch mechanism 41*a* [which] is controlled by a microprocessor 64 (see FIG. 15) in the control unit 10” which is programmed to release the brake/clutch mechanism 41*a* after the completion of a specified number of isometric events or repetitions” (*id.* at col. 21, ll. 23-27).

14. Stark discloses that “an entire exercise routine can be controlled by the programmed microprocessor. . . . [S]uch a system may be used to create a variety of exercise requirements which an individual will be encouraged to follow by his physician in order to conduct a proper exercise or rehabilitative routine” (Stark, col. 21, ll. 37-50).

15. Stark discloses that the brake mechanism functions by “pushing the brake button, wherein a circuit is completed allowing an electric current to pass through the stator coil 45*a*, thereby creating a magnetic field which attracts the armature 47*a* and prevents the armature 47*a* from turning with respect to the coil 45*a*” (Stark, col. 21, ll. 1-5).

*PRINCIPLES OF LAW*

As noted above, the Supreme Court recently reaffirmed the proposition “that when a patent ‘simply arranges old elements with each performing the same function it had been known to perform’ and yields no more than one would expect from such an arrangement, the combination is obvious.” *KSR Int’l v. Teleflex Inc.*, 127 S. Ct. 1727, 1740 (2007) (quoting *Sakraida v. AG Pro, Inc.*, 425 U.S. 273, 282 (1976)). The Court reasoned that, “if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.” *Id.* Thus, in evaluating a claim for obviousness, one “must ask whether the improvement is more than the predictable use of prior art elements according to their established functions.” *Id.*

The Supreme Court also noted that the analysis under 35 U.S.C. § 103 “need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *Id.* at 1741. The Court further advised that “[a] person of ordinary skill is . . . a person of ordinary creativity, not an automaton.” *Id.* at 1742.

Regarding hindsight reasoning, the Court stated that “[a] factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning. Rigid preventative rules that deny factfinders recourse to common sense, however,

are neither necessary under our case law nor consistent with it.” *Id.* at 1742-1743 (citations omitted).

### *ANALYSIS*

The Examiner finds that Whitelaw “teaches using two friction members . . . to vary the resistance” applied by its device, and that Airy discloses using a program-containing control unit to adjust the resistance of its device (Non-Final Rejection 5). The Examiner concedes that “Airy does not teach that the program controls the pressure between friction members” as recited in claim 2 (*id.*). The Examiner nonetheless contends that one of ordinary skill would have found claim 2 obvious because Stark discloses that “it is known in the orthopedic rehabilitative art to program a control unit to control the resistance between two friction members in order to encourage the user to follow the exercise regimen[] of the physician” (*id.* at 5-6).

Appellants argue that the tendency of Stark’s program to encourage patient adherence to a prescribed exercise routine is not “a reason why someone would incorporate the invention of Stark with the teachings in Whitelaw and Airy” (Br. 21). Appellants urge that the program recited in claim 2 is distinguishable from that disclosed by Stark because Stark’s program “even wakes the patient up and reminds the patient that it is time to start exercising. It is not part of the means for applying pressure” (*id.* at 21-22). Appellants conclude that the Examiner’s position is based on a hindsight reconstruction produced by pulling together different parts of prior art systems, and that the combination resulting from that reconstruction would not yield the combination of features recited in claim 2, “but would

create an entirely different combination which would ensure that the patient follows a program that he has a volition to change” (*id.* at 22).

We are not persuaded by Appellants’ argument.

Claim 2 depends from claim 1 and requires the means for adjusting the friction means to be controlled by a program that controls the pressure between two friction members. Stark discloses that the resistance of movement between two moveable members of a therapeutic brace device can be “controlled by a microprocessor 64 . . . which is programmed to release the brake/clutch mechanism . . . after the completion of a specified number of isometric events or repetitions” (Stark, col. 21, ll. 23-27). Thus, “an entire exercise routine can be controlled by the programmed microprocessor. . . . [S]uch a system may be used to create a variety of exercise requirements which an individual will be encouraged to follow by his physician in order to conduct a proper exercise or rehabilitative routine” (*id.* at col. 21, ll. 37-50).

We agree with the Examiner that one of ordinary skill, being a person of ordinary creativity and common sense, *KSR*, 127 S. Ct. at 1742-43, would have inferred from Stark that a programmable resistance control means would be suitable for controlling the resistance in therapeutic brace devices using friction-based mechanisms, such as Whitelaw’s, by controlling the pressure between the friction members. We also agree with the Examiner that a person of ordinary skill would have made that inference from only the disclosures of the cited references, without the use of hindsight.

The fact that Stark’s program might include other elements, including a means to wake the patient, does not undermine Stark’s clear disclosure

that, at the time of Appellants' invention, the art recognized that a program-controlled microprocessor was a suitable means of controlling the resistance means in therapeutic devices of the type disclosed by Whitelaw and Airy. (Stark, col. 21, ll. 23-50). Therefore, based on the teachings of the cited references, we agree with the Examiner that one of ordinary skill would have considered claim 2 obvious. We affirm the Examiner's obviousness rejection of claim 2.

The Examiner contends that claim 3 would have been obvious to one of ordinary skill because "Stark teaches in column 21 that the friction members can be magnetically controlled in order to adjust resistance between the members" (Non-Final Rejection 6).

Appellants contend that claim 3 is distinguishable from Stark's teaching because claim 3 recites "friction members that are programmed to control resistance to movement for the purpose of correcting for false tracking is controlled magnetically. There is no teaching of this in any of the references cited by the Examiner" (Br. 22). Appellants urge that "[t]he subject matter of the claim must be considered as a whole and when considered as a whole, the control of the friction disks magnetically relates to tracking not to controlling the patient so that the patient obeys the physician's orders" (*id.*).

We are not persuaded by Appellants' argument.

Claim 3 depends from claim 2 and recites that the pressure between the two friction members be controlled magnetically. Stark discloses that the brake mechanism for its therapeutic device functions by "pushing the brake button, wherein a circuit is completed allowing an electric current to

pass through the stator coil 45*a*, thereby creating a magnetic field which attracts the armature 47*a* and prevents the armature 47*a* from turning with respect to the coil 45*a*” (Stark, col. 21, ll. 1-5).

We agree with the Examiner that, one of ordinary skill, being a person of ordinary creativity and common sense, *KSR*, 127 S. Ct., at 1742-43, would have inferred from Stark that it would be suitable to control a friction-based mechanism such as Whitelaw’s by magnetically controlling the pressure between the friction members. We note that the cited references might not use the term “tracking” to describe the purpose for, or technique by which, the limbs in the prior art therapeutic devices are held in correct alignment. However, “[i]n determining whether the subject matter of a patent claim is obvious, neither the particular motivation nor the avowed purpose of the patentee controls. What matters is the objective reach of the claim. If the claim extends to what is obvious, it is invalid under § 103.” *KSR*, 127 S. Ct. at 1741-42.

Therefore, because claim 3 encompasses an apparatus comprising known elements functioning as disclosed in the cited prior art, we agree with the Examiner that a person of ordinary skill would have considered claim 3 obvious. We affirm the Examiner’s obviousness rejection of claim 3.

With respect to claim 4, the Examiner notes that Whitelaw uses a screw to drive the friction members together, and finds that “[o]ne skilled in the art would have known to use a motor to drive the screw in order to automate the device for ease of use” (Non-Final Rejection 6).

Appellants contend that the Examiner has not provided any explanation supporting the conclusion of obviousness, and urge that “[t]he

problem is that automating that process would still not provide a variation in the resistance in accordance with a program and it is not clear how someone automates a finger adjustment of a screw to set the pressure or just what that automation would accomplish” (Br. 23). Thus, Appellants conclude “the motor driven screw for adjusting the two friction members, when the claim is considered as a whole, is an additional reason why claim 4 is patentable over the cited references” (*id.*).

We are not persuaded by this argument. As pointed out above, the analysis under 35 U.S.C. § 103 “need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR*, 127 S. Ct. at 1741. Moreover, “[a] person of ordinary skill is . . . a person of ordinary creativity, not an automaton.” *Id.* at 1742.

In the instant case, we agree with the Examiner that one of ordinary skill using a program-controlled resistance mechanism like Stark’s would have reasonably inferred that a motor driven screw drive means would have been suitable for tightening or increasing the pressure on the friction members of the resistance mechanism. We therefore affirm the Examiner’s obviousness rejection of claim 4.

In summary, we affirm the Examiner’s obviousness rejections of claims 2-4. As discussed above, Appellants’ arguments with respect to claims 5-12 amount to merely restating the claimed subject matter, and therefore are “not an argument as to why the claims are separately

patentable.” 37 C.F.R. § 1.192(c)(7). Claims 5-12 therefore fall with claims 2-4.

OBVIOUSNESS-TYPE DOUBLE PATENTING --  
CLAIMS 1, 2, AND 12

*ISSUE*

The issue with respect to this rejection is whether the Examiner erred in rejecting claims 1, 2, and 12 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-7 of Joutras.

*FINDINGS OF FACT*

16. Claim 1 of Joutras reads as follows:

1. Apparatus comprising:  
a first section, a second section, and a third section;  
said third section connecting said first section and second  
section whereby at least one of the first section and  
second section is adapted to be moved by a person with  
respect to the other of said first and second sections;  
resistance means connected to said first and second sections  
adjacent to said third section for varying the resistance of  
movement of the first and second sections with respect to  
each other about said third section;  
said resistance means including means for providing a  
predetermined resistance force against movement of said  
first and second sections with respect to each other in at  
least one of clockwise and counterclockwise movement  
about said third section; and  
means for attaching said first section to a portion of the person  
on one side of a joint and for attaching said second  
section to another portion of the person on another side  
of the joint, wherein the resistance means includes



program means for varying a resistance force over a portion of movement in accordance with the program means at different angles between the first and second sections wherein the resistance means includes means for generating the resistance force by friction between two solid surfaces moved with respect to each other while in contact with each other; said two solid surfaces being part of said means for generating the resistance force.

17. Claim 1 of Joutras therefore has the following elements in common with appealed claim 1:

(a) a jointed limb brace with first and second sections and brace joint means (Joutras claim 1: “said third section connecting said first section and second section whereby at least one of the first section and second section is adapted to be moved by a person with respect to the other of said first and second sections”),

(b) means for connecting the first and second sections whereby the first section can be connected to a limb on one side of a joint, and the second section can be connected to a limb on the opposite side of the joint (Joutras claim 1: “means for attaching said first section to a portion of the person on one side of a joint and for attaching said second section to another portion of the person on another side of the joint”),

(c) friction means, connected to both sections of the apparatus and adjacent to the brace joint means, for varying the resistance of movement of the sections with respect to the other (Joutras claim 1: “resistance means connected to said first and second sections adjacent to said third section . . . wherein the resistance means includes means for generating the resistance

force by friction between two solid surfaces moved with respect to each other while in contact with each other”), and

(d) means for adjusting the resistance in the friction means (Joutras claim 1: “means for providing a predetermined resistance force against movement of said first and second sections with respect to each other”).

*PRINCIPLES OF LAW*

“A later patent claim is not patentably distinct from an earlier patent claim if the later claim is obvious over, or anticipated by, the earlier claim.” *Eli Lilly & Co. v. Barr Labs., Inc.*, 251 F.3d 955, 968 (Fed. Cir. 2001).

*ANALYSIS*

Appellants contend that claims 1-7 of Joutras “are all missing the teaching in the last paragraph of claim 1 and the teaching of claim 12 of this application. None of these claims relate to providing tracking by compensating for the weakened muscles to permit normal tracking” (Br. 25). Appellants argue that “[e]ven in a double patenting rejection, the claims must be interpreted as a whole and when . . . claim 1, 2 and 12 are interpreted as a whole, they are inventive over claims 1-7 of the former patent to Joutras. It is unobvious over claims 1-7 of Joutras to compensate for tracking and particularly with the detail recited in claim 12” (*id.*).

We are not persuaded by this argument. As is evident from the comparison of appealed claim 1 to claim 1 of Joutras, Joutras’ claim 1 recites all of the structural elements recited in appealed claim 1.

We note that appealed claim 1 contains the functional limitation that the means for adjusting the friction means “provides a preadjusted resistance to motion . . . to provide proper tracking.” As discussed above, when the

recitation “proper tracking” is interpreted in light of the Specification, it limits claim 1 to apparatuses that do not allow limbs in the deployed device to move in an abnormal alignment with respect to each other.

Claim 1 of Joutras recites a “means for attaching said first section to a portion of the person on one side of a joint and for attaching said second section to another portion of the person on another side of the joint.” In our view, one of ordinary skill would have reasonably concluded, given the therapeutic exercise functionality of the device claimed by Joutras, that it would have been desirable to configure the attachment means such that they would ensure proper limb movement when deployed by a user.

We therefore affirm the Examiner’s obviousness-type double patenting rejection of claim 1. Appellants’ arguments with respect to claims 2 and 12 amount to merely restating the claimed subject matter, and therefore are “not an argument as to why the claims are separately patentable.” 37 C.F.R. § 1.192(c)(7). Claims 2 and 12 therefore fall with claim 1.

OBVIOUSNESS-TYPE DOUBLE PATENTING --  
CLAIMS 4, 10, AND 11

*ISSUE*

The issue with respect to this rejection is whether the Examiner erred in rejecting claims 4, 10, and 11 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-7 of Joutras in view of Whitelaw.

*FINDINGS OF FACT*

19. Claim 4 reads as follows:

4. Orthotic apparatus according to claim 2 in which the pressure between said first and second friction members is controlled by a motor-driven screw drive means.

*PRINCIPLES OF LAW*

“A later patent claim is not patentably distinct from an earlier patent claim if the later claim is obvious over, or anticipated by, the earlier claim.”

*Eli Lilly & Co. v. Barr Labs., Inc.*, 251 F.3d 955, 968 (Fed. Cir. 2001).

*ANALYSIS*

Appellants’ argument, in its entirety, reads as follows:

Claims 4, 10 and 11 all depend directly or indirectly from claim 1 and avoid double patenting over claims 1-7 of the former Joutras patent for the same reasons. The patent to Whitelaw does not render the tracking concept obvious. Similarly, Whitelaw does not disclose a motor driven screw nor make it obvious over the claims 1-7.

(Br. 26.)

We do not find this argument persuasive. For the reasons discussed above, in our view, one of ordinary skill would have considered it obvious to configure Joutras’ device to meet the “tracking” limitation recited in claim 1.

Moreover, as also discussed above, the artisan of ordinary skill is a person of ordinary creativity and common sense. *KSR Int’l v. Teleflex Inc.*, 127 S. Ct. 1727, 1742-43 (2007). Thus, the analysis under 35 U.S.C. § 103 “need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences

and creative steps that a person of ordinary skill in the art would employ.”  
*Id.* at 1741.

In the instant case, we agree with the Examiner that a person of ordinary skill viewing Whitelaw’s disclosure of a manually operated adjustment screw would have reasoned that a motor driven screw drive means would also be a suitable means for tightening the friction resistance means in a therapeutic brace device such as that claimed by Joutras. We therefore also agree with the Examiner that claim 4 would have been obvious to one of ordinary skill when viewed in light of claim 1 of Joutras.

We affirm the Examiner’s obviousness-type double patenting rejection of claim 4. Because they were not argued separately, claims 10 and 11 fall with claim 4. 37 C.F.R. § 1.192(c)(7).

OBVIOUSNESS-TYPE DOUBLE PATENTING --  
CLAIMS 3, 5, 6, 8, AND 9

*ISSUE*

The issue with respect to this rejection is whether the Examiner erred in rejecting claims 3, 5, 6, 8, and 9 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-7 of Joutras in view of Stark.

*FINDINGS OF FACT*

20. Claim 3 reads as follows:

3. Orthotic apparatus according to claim 2 in which the pressure between said first and second friction members is controlled magnetically.

*PRINCIPLES OF LAW*

“A later patent claim is not patentably distinct from an earlier patent claim if the later claim is obvious over, or anticipated by, the earlier claim.”  
*Eli Lilly & Co. v. Barr Labs., Inc.*, 251 F.3d 955, 968 (Fed. Cir. 2001).

*ANALYSIS*

Appellants argue that because claims 3, 5, 6, 8, and 9 all ultimately depend from claim 1, those claims “avoid double patenting over claims 1-7 of Joutras for the same reasons that claim 1 avoids double patenting. The addition of the teachings of the patent to Stark does not change this situation because the patent to Stark does not make the adjustment of resistance for curing tracking problems obvious” (Br. 26).

For the reasons discussed above, we are not persuaded that the “tracking” feature of appealed claim 1 patentably distinguishes the appealed claims from Joutras’ claims.

Appellants argue that “Stark does not teach the programming of the resistance members as claimed in claim 2 nor the magnetic control of those features as covered by claim 3 that depends from claim 2 nor those features as incorporated in claims 5 and 6 which depend from claim 3 nor those features in claims 8 and 9 that also depend from claim 3” (Br. 26).

We do not find this argument persuasive. We note that claim 3 depends from claim 2, and that claim 2 requires the friction means to be controlled by a program that controls the pressure between two friction members. However, Joutras’ claim 1 clearly recites that “the resistance means includes program means for varying a resistance force over a portion of movement in accordance with the program means at different angles

between the first and second sections,” and that the resistance means also “includes means for generating the resistance force by friction between two solid surfaces moved with respect to each other while in contact with each other.”

Thus, even to the extent that it depends from appealed claim 2, appealed claim 3 does not differ from claim 1 of Joutras with respect to the program-controlled friction means. Moreover, as discussed above, Stark discloses that the brake mechanism for its therapeutic device functions by “pushing the brake button, wherein a circuit is completed allowing an electric current to pass through the stator coil 45*a*, thereby creating a magnetic field which attracts the armature 47*a* and prevents the armature 47*a* from turning with respect to the coil 45*a*” (Stark, col. 21, ll. 1-5).

Based on this disclosure, we agree with the Examiner that one of ordinary skill, being a person of ordinary creativity and common sense, *KSR*, 127 S. Ct. at 1742-43, would have inferred from Stark that it would be suitable to control a friction-based mechanism such as that recited in Joutras’ claim 1 by magnetically controlling the pressure between the friction members.

We therefore also agree with the Examiner that claim 3 would have been obvious to one of ordinary skill when viewed in light of Joutras’ claim 1 and Stark. We affirm the Examiner’s obviousness-type double patenting rejection of claim 3 over the claims of Joutras and Stark. Claims 5, 6, 8, and 9 fall with claim 3. 37 C.F.R. § 1.192(c)(7).

## SUMMARY

We affirm the Examiner's rejection of claim 1 under 35 U.S.C. § 102(b) as anticipated by Whitelaw.

We affirm the Examiner's rejection of claim 1 under 35 U.S.C. § 103(a) as obvious in view of Airy and Whitelaw.

We affirm the Examiner's rejection of claims 2-12 under § 103(a) as obvious in view of Airy, Whitelaw, and Stark.

We affirm the Examiner's rejection of claims 1, 2, and 12 under the judicially created doctrine of obviousness-type double patenting over claims 1-7 of Joutras.

We affirm the Examiner's rejection of claims 4, 10, and 11 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-7 of Joutras in view of Whitelaw.

We affirm the Examiner's rejection of claims 3, 5, 6, 8, and 9 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-7 of Joutras in view of Stark.



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No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv) (2006).

AFFIRMED

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